

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A fuel cell, ~~comprising~~ consisting essentially of:

(i) a tubular polymer electrolyte membrane, with a fuel electrode on an inner side of the membrane, and with an air electrode on an outer side of the ~~membrane~~[,] ~~membrane~~;

(ii) ~~wherein~~ at least one of the fuel electrode [[and]] or the air electrode is composed of a carbon particle material ~~having a surface on the surface of~~ which catalyst fine-particulates are dispersed and ~~loaded~~[,] ~~loaded~~; and

(iii) the remaining electrode being composed of a catalyst,

wherein the fuel cell has a hollow or cavity having a diameter in a range of 0.2 to 10 mm, an outer diameter of the fuel cell having a range of 0.5 to 12 mm, and a length of the fuel cell having a length of from 20 to 1000 mm,

wherein the polymer electrolyte membrane prevents a fuel on the inner side of the membrane from leaking, [[and]]

wherein methanol is introduced used as the fuel into the hollow or cavity of the fuel cell to obtain an output power, [[and]]

wherein the combination of the carbon particle material and the tubular polymer electrolyte membrane brings about a flexibility of the fuel cell, and

wherein the flexible fuel cell is flexible to be accommodated to an apparatus and operates at a temperature to cause output of electric power at 100°C or less.

2. (Cancelled).

3. (Original) The fuel cell according to claim 1, wherein said tubular polymer electrolyte membrane has a catalyst layer deposited or coated on a surface thereof.

4. (Currently Amended) The fuel cell according to claim 1, wherein [[fuel]] the fuel is brought into contact with said fuel electrode ~~on the surface of said tubular polymer electrolyte membrane~~, and an oxidizer is brought into contact with said air electrode ~~on the surface of said tubular polymer electrolyte membrane~~.

5. (Currently Amended) The fuel cell according to claim 1, wherein said fuel cell is utilized attached to a portable device as a power source ~~of a portable device~~.

6. (Cancelled)

7. (Cancelled)

8. (Original) The fuel cell according to claim 1, which is a small fuel cell.

9. (Cancelled)

10. (Cancelled)

11. (Previously Presented) The fuel cell according to claim 1, wherein the tubular polymer electrolyte membrane is a membrane selected from the group consisting of a perfluorosulfonic acid membrane, a perfluorocarbonic acid membrane, a poly-styrene-vinylbenzene membrane and a quaternary ammonium anion-exchange membrane.

12. (Cancelled)

13. (Currently Amended) A fuel cell, comprising consisting essentially of:

(i) a tubular polymer electrolyte membrane, with a fuel electrode on an inner side of the membrane, and with an air electrode on an outer side of the membrane[[,]] membrane; and

(ii) wherein said tubular polymer electrolyte membrane has a catalyst layer deposited or coated on a surface thereof both surfaces of the tubular polymer electrolyte membrane, and the tubular polymer electrolyte membrane prevents fuel on the inner side of the membrane from leaking,

wherein methanol is ~~used~~ introduced as the fuel into the hollow or cavity of the fuel cell to obtain an output power,

wherein the tubular polymer electrolyte membrane has an inner diameter of 0.2 to 10 mm, an outer diameter of 0.5 to 12 mm, and a length of 20 to 1,000 mm,

wherein the combination of the catalyst and the tubular polymer electrolyte membrane brings about a flexibility of the fuel cell, and

wherein the flexible fuel cell is ~~flexible to be accommodated to an apparatus and operates at a temperature to cause output of electric power at 100°C or less.~~

14. (Currently Amended) The fuel cell according to claim 13, wherein [[fuel]] the fuel is brought into contact with said fuel electrode ~~on the surface of said tubular polymer electrolyte membrane~~, and an oxidizer is brought into contact with said air electrode ~~on the surface of said tubular polymer electrolyte membrane~~.

15. (Currently Amended) The fuel cell according to claim 13, wherein said fuel cell is utilized attached to a portable device as a power source of a portable device.

16. (Cancelled)

17. (Cancelled)

18. (Previously Presented) The fuel cell according to claim 13, which is a small fuel cell.

19. (Cancelled)

20. (Cancelled)

21. (Previously Presented) The fuel cell according to claim 13, wherein the tubular polymer electrolyte membrane is a membrane selected from the group consisting of a perfluorosulfonic acid membrane, a perfluorocarbonic acid membrane, a poly-styrene-vinylbenzene membrane and a quaternary ammonium anion-exchange membrane.

22. (New) The fuel cell according to claim 1, wherein the fuel cell operates at a temperature to cause output of electric power at 100°C or less.

23. (New) The fuel cell according to claim 13, wherein the fuel cell operates at a temperature to cause output of electric power at 100°C or less.